

CLAIM AMENDMENTS

1-21 (canceled)

22. (previously presented) An apparatus for subjecting a substrate to a localized liquid treatment for cleaning and/or etching of the substrate, the apparatus comprising:

support for holding the substrate,

a first supply system adapted to supply a liquid on a first part of the surface of the substrate, and

a second supply system adapted to supply a gaseous tensio-active substance to a second part of the substrate, the second part of the substrate substantially adjacent to the first part, wherein the first and second supply systems are positioned to inhibit the liquid from substantially contacting the second part of the substrate and to cause the liquid and the gaseous tensio-active substance to mix at a boundary between the first and second part of the substrate creating a mixture having a lower surface tension than the liquid, wherein the mixture further inhibits the liquid from substantially contacting the second part of the substrate.

23. (previously presented) An apparatus according to claim 22, further comprising a rotational device wherein the rotational device rotates the substrate around an axis which is perpendicular to the substrate, the axis being through a geometric center of the substrate.

24. (previously presented) An apparatus according to claim 23, wherein the substrate is circular shaped and has a first side and a second side, the first side having an annular edge area,

wherein the first supply system includes at least one nozzle adapted to supply a stream of liquid on the annular edge area of the substrate;

wherein the second supply system includes at least one nozzle adapted to dispense a gaseous tensio-active substance on an area of the first side adjacent to the annular edge area, the area of the first side being closer to the center of the substrate than the annular edge area; and

wherein the at least one nozzles of the first and second supply systems supply a contiguous stream of fluid.

25. (previously presented) An apparatus according to claim 24, wherein the substrate is horizontally placed.

26. (currently amended) An apparatus according to claim 24, wherein the at least one nozzle-nozzles of the first and second supply systems is-are positionable on any location along a fixed radius of the substrate.

27. (previously presented) An apparatus according to claim 24, further comprising a nozzle adapted to direct a stream of a treatment liquid onto the entire second side of the substrate.

28. (previously presented) An apparatus according to claim 22, wherein the substrate has a geometric center, an axis which is perpendicular to the substrate at the geometric center of the substrate, a central part around the axis of the substrate and an annular edge,

wherein the first supply system includes a first annular channel adapted to supply the liquid to the entire annular edge area of the surface of the substrate,
wherein the second supply system includes a central channel adapted to supply a gaseous substance to the central part of the substrate, the central channel being coaxial with the axis of the substrate, and

wherein the second supply system further includes a second annular channel placed concentrically with respect to the first channel and closer to the geometric center of the substrate, the second channel adapted to guide the gaseous substance coming from the central part of the substrate, in order to prevent the liquid from touching the central part.

29. (previously presented) An apparatus according to claim 23, wherein the substrate has a central part around the axis of the substrate and an annular edge,

wherein the first supply system includes a first annular channel adapted to supply the liquid to the entire annular edge area of the surface of the substrate,

wherein the second supply system includes a central channel adapted to supply a gaseous substance to the central part of the substrate, the central channel being coaxial with the axis of the substrate, and

wherein the second supply system further includes a second annular channel placed concentrically with respect to the first channel and closer to the geometric center of the substrate, the second channel adapted to guide the gaseous substance coming from the central part of the substrate, in order to prevent the liquid from touching the central part.

30. (previously presented) An apparatus according to claim 28, further comprising a rotational device, wherein the rotational device rotates the apparatus around an axis which is perpendicular to the substrate and which is through the geometric center of the substrate.

31. (previously presented) An apparatus according to claim 28, wherein the substrate has a first side and a second side, and further comprising a nozzle adapted to dispense a stream of a treatment liquid on the entire second side.

32. (previously presented) An apparatus according to claim 28, further comprising a sealing device positioned between the substrate and an outer wall of the second annular channel.

33. (previously presented) An apparatus according to claim 22, wherein the substrate is circular shaped and has two sides with an annular edge and an outer rim, and further comprising: a container filled with an amount of treatment liquid so that a pressure is maintained above the surface of the amount of treatment liquid, the pressure being less than or equal to an ambient pressure, the container having a narrow gap in one side, into which the circular substrate is partially inserted, so that at least a portion of the annular edge and the outer rim of the substrate is immersed in the liquid,

at least one pair of nozzles, one nozzle of the pair on each side of the substrate, directing a stream of a gaseous substance at a border area between the container and the substrate.

34. (previously presented) An apparatus according to claim 23, wherein the substrate is circular shaped and has two sides with an annular edge and an outer rim, and further comprising:

a container filled with an amount of treatment liquid so that a pressure is maintained above the surface of the amount of treatment liquid, the pressure being less than or equal to an ambient pressure, the container having a narrow gap in one side, into which the circular substrate is partially inserted, so that at least a portion of the annular edge and the outer rim of the substrate is immersed in the liquid,

at least one pair of nozzles, one nozzle of the pair on each side of the substrate, directing a stream of a gaseous substance at a border area between the container and the substrate.

35. (previously presented) An apparatus according to claim 33, wherein the substrate is positioned in a horizontal plane

36. (previously presented) An apparatus according to claim 33, further comprising a rotational device, the rotational device rotating the container around an axis which is perpendicular to the substrate, the axis being through a geometric center of the substrate.

37. (previously presented) An apparatus according to claim 22, wherein the first supply system includes a central channel used to supply a stream of liquid to the surface of the substrate and a second channel, concentrically surrounding the first channel, and draining the stream of liquid from the surface of the substrate; and

wherein the second supply system includes a third channel, concentrically surrounding the second channel and used to supply a stream of a tensio-active substance to the substrate surface.

38. (previously presented) An apparatus according to claim 37, wherein the substrate is positioned in a horizontal plane.

39. (previously presented) An apparatus according to claim 37, wherein the second supply system further comprises a fourth channel, the fourth channel being concentrically placed with respect to the third channel, the fourth channel being used to drain the gaseous tensio-active substance from the substrate surface.

40. (previously presented) An apparatus according to claims 37, further comprising a sealing device, the sealing device positioned between the substrate and an outer wall of the second channel.

41. (previously presented) An apparatus according to claim 39 further comprising sealing devices, the sealing devices positioned between the substrate and an outer wall of the second channel and between the substrate and an outer wall of the apparatus.

42. (currently amended) An apparatus according to claim 41 wherein the outer wall of the apparatus is an outer waswall of the fourth channel.

43. (currently amended) An apparatus according to claim 41 wherein the outer wall of the apparatus is an outer ~~was~~was wall of the third channel.

44. (previously presented) An apparatus according to claim 22, wherein the first supply system includes a central channel, the central channel containing an amount of a liquid such that the liquid is in contact with the surface of the substrate, and that a pressure is maintained above a surface of the amount of liquid, the pressure being less than or equal to an ambient pressure on the substrate surface, and

wherein the second supply system includes a second channel, the second channel concentrically surrounding the central channel, and supplying a stream of a gaseous tensio-active substance on the surface of the substrate.

45. (previously presented) An apparatus according to claim 44, wherein the substrate is positioned in a horizontal plane.

46. (previously presented) An apparatus according to claim 44, wherein the second supply system further comprises a third channel, the third channel concentric with respect to the second channel, the third channel being used to drain the gaseous tensio-active substance from the substrate surface.

47. (previously presented) An apparatus according to claim 44, further comprising a sealing device, the sealing device positioned between the substrate and an outer wall of the central channel.

48. (previously presented) An apparatus according to claim 46, further comprising sealing devices, the sealing devices being positioned between the substrate and an outer wall of the central channel and between the substrate and an outer wall of the third channel.